Being a researcher...

at the Istituto Superiore di Sanità


research in public health
for the common good
one health and global health approach
broad vision on well-being
open informal environment

about ISS

The Istituto Superiore di Sanità (ISS)
is the National Institute of Health in Italy,
the **leading Italian research institute for public health**.
Founded in 1934 to respond to the health emergencies
of the country: yesterday malaria, today COVID-19.
As technical-scientific body of the National Health Service,
it provides scientific evidence and support
to the Ministry of Health, Government, Parliament and Regions,
and also to scientific societies, health professionals,
patients' associations and citizens.

Health research at 360°

The ISS carries on research, prevention
and control activities in a
"one health" perspective
with **multidisciplinary skills**.

Major areas of interest:
communicable, non-communicable and rare
diseases, risks from environmental exposures
and climate change, promotion of correct lifestyles
according to a "life course" approach, mental health,
pathological addictions and doping, drugs, food
safety, nutrition, chemistry, radiation, innovative
technologies and telemedicine.

Cooperation, training and communication

The ISS has **collaborations** with the European Commission, WHO, EFSA, ECDC, IARC, OECD, OIE, FAO, UNEP and other organizations.

It develops **cooperation** and support projects with different countries.

Scientific training **courses**, **congresses** and **events** are organized to promote public health debate and health education at national and international level.

The ISS publishes an **international scientific journal** *Annali*, newsletters and several series of technical reports and other bulletins.

The Library provides access to **20,000 electronic journals** and to the main biomedical databases, besides 9,000 printed periodicals and 200,000 monographs.

The ISS has developed communication channels for **citizens** and schools: **helplines** to provide clear and qualified information on addictions, doping, gambling, AIDS, sexually transmitted diseases and rare diseases; a **museum** to create awareness on scientific heritage, along with health promotion; a portal of health information in simple words, **ISSalute**.

and more...

Equal employment opportunities

regardless of ethnicity,
nationality, gender,
sexual orientation,
gender identity,
religion, pregnancy, age, disability,
civil partnership, marital, family status

working close to the Sapienza University, the National Research Council, the National Academy of Sciences and other research institutions.

Opportunity
to live in **Rome**,
the capital of Italy.
A city of art, history,
culture and... research

ISS in figures

1,800	Staff
+1,300	Publications per year
+16,000	Authorizations, controls and opinions (≥40 a day)
62	Patent families
7	Helplines
220 M	Total revenue

Scientific and technical organization

- **6** Departments
- **5** Technical-scientific services
- **1** Notified Body to assess medical devices
- **8** Offices of the President
- **16** National Centres
- **2** Reference Centres

www.iss.it

@istsupsan

ISS.social

iss_social

ISS ranking

The ISS is **in the top 10% Italian institutions:** it ranks **29th among 372 bodies** including Universities, public and private research institutes, international and European research centres based in Italy, according to the number of top 2% most quoted scientists.

https://doi.org/10.1371/journal.pbio.3000918

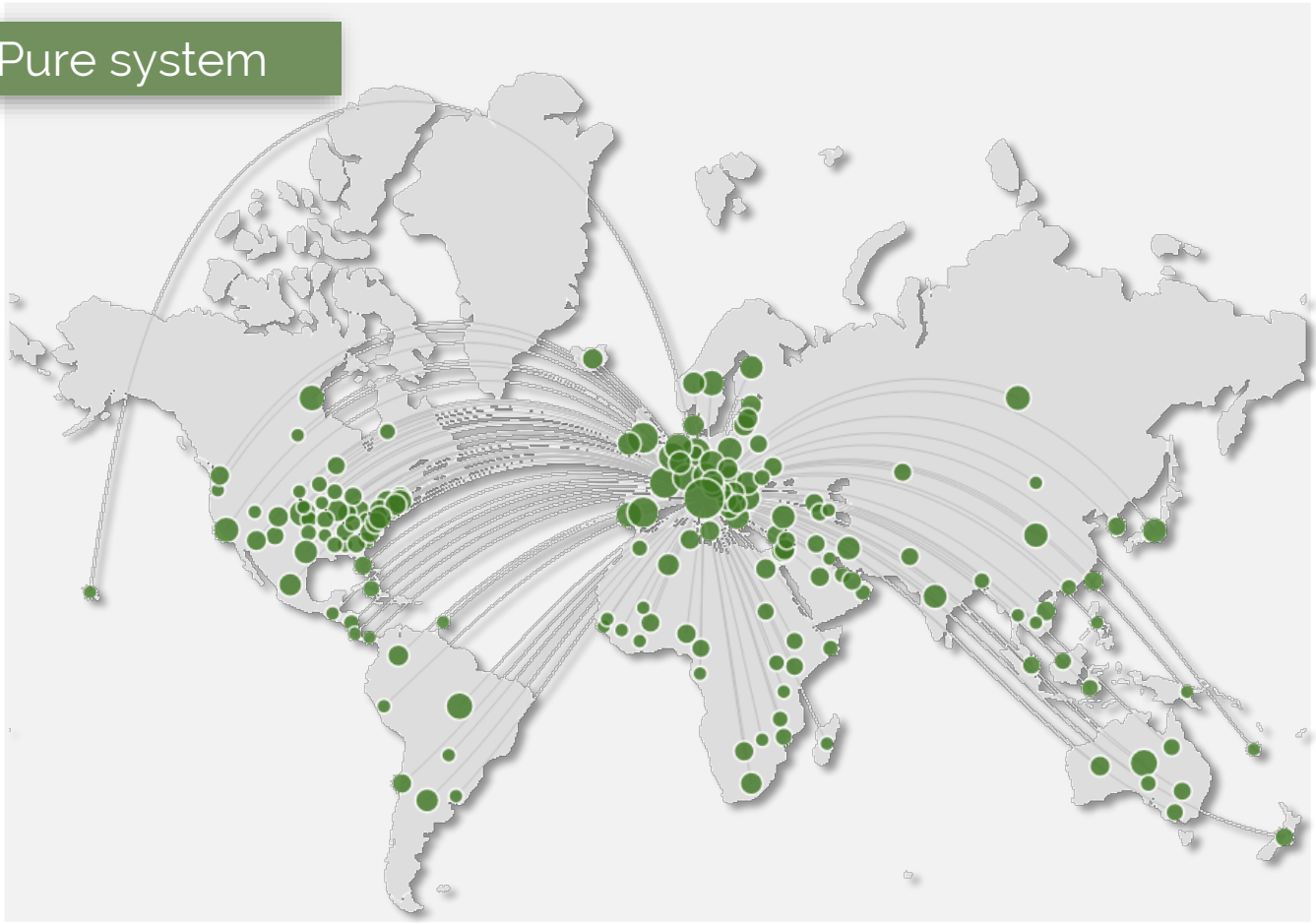
The ISS ranks **6th among 210 Italian institutions** according to the Ranking Web of Research Centers.

https://research.webometrics.info/en

ISS worldwide collaboration

through publications

Pure system



https://moh-it.pure.elsevier.com/en/organisations/istituto-superiore-di-sanita/network-map/

ISS strategic research areas

The ISS scientific activity is based on a 3-year strategic plan.
The 2021-2023 plan consists of **7 research areas**:

through **publications, communication & training**

Strategic research areas

Communicable diseases

Basic, clinical, translational and public health research in the field of infectious diseases, caused by viruses, bacteria, fungi, parasites and prions, including HIV/AIDS and other emerging pathogens.

Studies on pathogenesis mechanisms of infectious diseases through the use of *in vivo*, *in vitro* and *ex vivo* models.

Research on antimicrobial activity of drugs and molecules through the development of new molecules and/or reformulation of molecules.

Development of new vaccines through the search for new antigens, vaccine models (subunit, DNA, mRNA), adjuvants and routes of administration for the prophylaxis of infectious diseases using *in vivo* and *in vitro* preclinical tests of immunogenicity and efficacy.

Strategic research areas

Non-communicable diseases and rare diseases

Studies aimed at genetic and environmental causes, pathophysiological mechanisms, prevention, diagnosis and treatment of non-communicable diseases, including rare diseases and congenital anomalies, with attention also to gender, contrast of inequalities, "life course" perspective and regenerative medicine.

Research in oncology and molecular medicine, health and gender, biomarkers and biological mechanisms of the main cardiovascular and endocrine-metabolic diseases, aging and phenomena of fragility and multimorbidity, rare diseases, undiagnosed rare diseases and congenital anomalies.

Research on neurodegenerative diseases, including dementias, and demyelinating diseases.

Research on the biological basis, treatment and prevention of mental and behavioural disorders and associated pathologies.

Strategic research areas

Health and environment

Studies on the characterization of exposure to risk factors in various environmental matrices and in relation to living environments and anthropogenic activities.

Research on the health impacts associated with environmental and climatic risks.

Areas of intervention:
indoor/outdoor air quality, water resources/integrated water cycle, soil/waste, toxicological risk assessment and epidemiological research and surveillance on the effects and impact of environmental/social risk factors on populations.

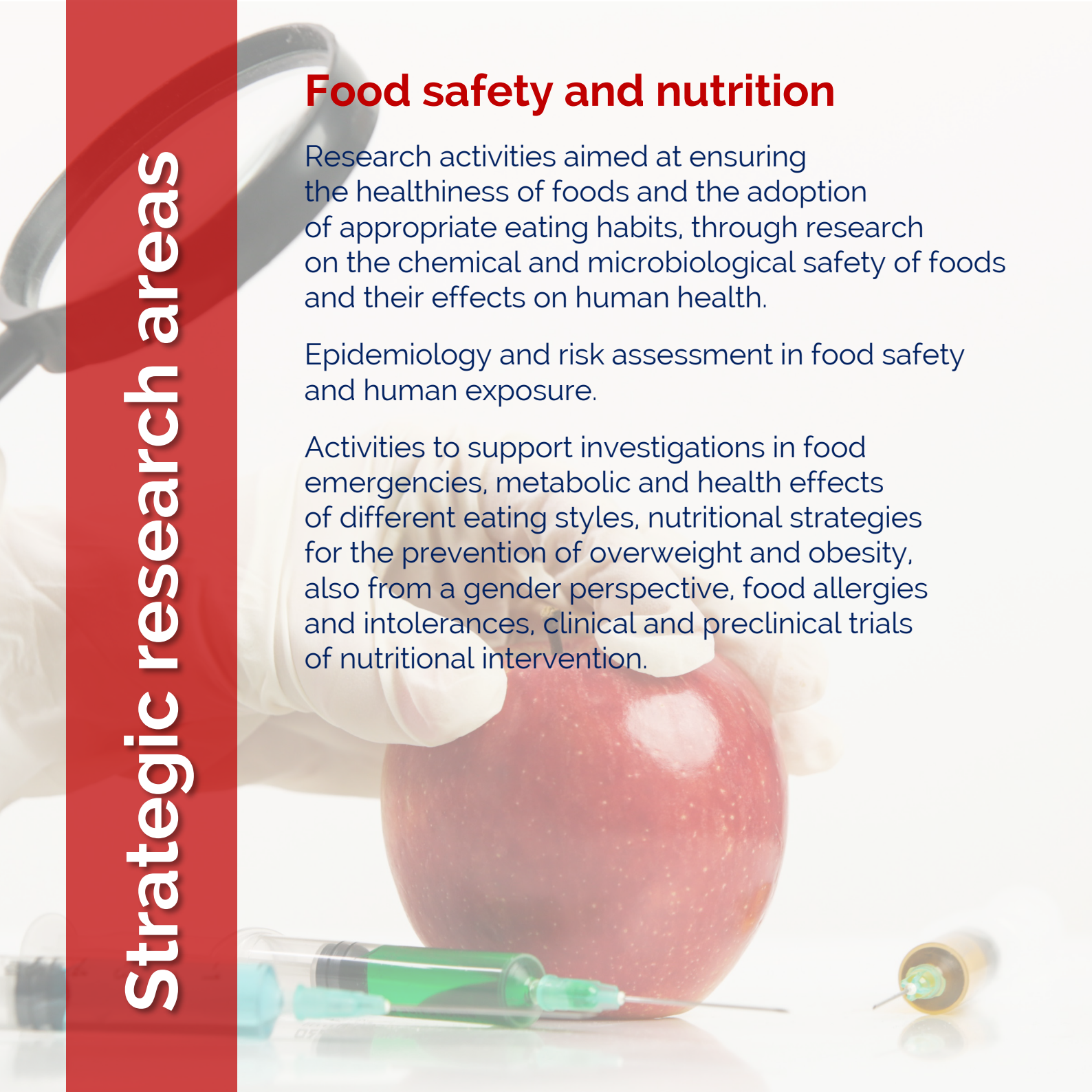
Strategic research areas

Food safety and nutrition

Research activities aimed at ensuring the healthiness of foods and the adoption of appropriate eating habits, through research on the chemical and microbiological safety of foods and their effects on human health.

Epidemiology and risk assessment in food safety and human exposure.

Activities to support investigations in food emergencies, metabolic and health effects of different eating styles, nutritional strategies for the prevention of overweight and obesity, also from a gender perspective, food allergies and intolerances, clinical and preclinical trials of nutritional intervention.



Strategic research areas

Drugs

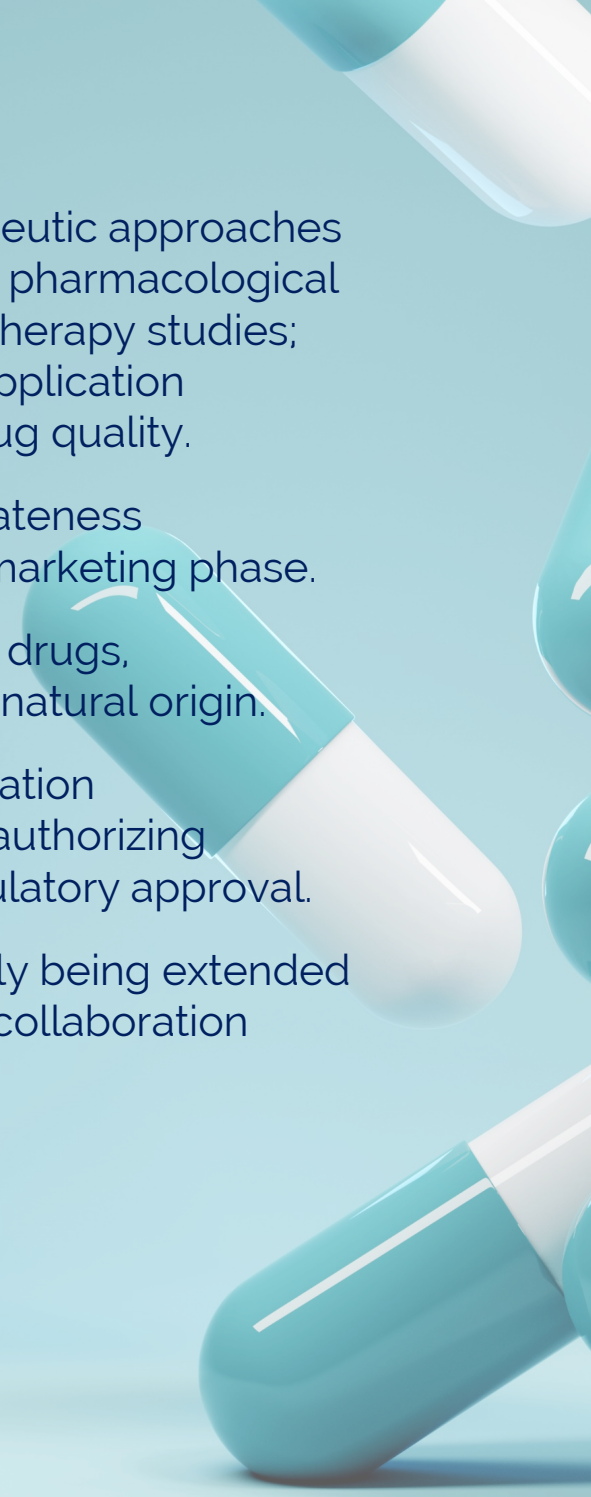
Development of new therapeutic approaches for human diseases through pharmacological research and experimental therapy studies; design, development, and application of analytical methods for drug quality.

Assessment of the appropriateness of use of drugs in the post-marketing phase.

Surveillance of the safety of drugs, vaccines and substances of natural origin.

Preclinical and clinical evaluation of drugs for the purpose of authorizing registration studies and regulatory approval.

Evaluation activity is currently being extended to veterinary drugs in close collaboration with the Ministry of Health.



Strategic research areas

Disease prevention, health promotion and global health

Epidemiological studies on disease prevention, mortality and adverse events.

Health promotion, at individual or group level.

Research for the improvement of health systems, quality and safety of care in economically developed and non-economically developed countries, also to combat inequalities in access to care.

Research on the health literacy and development of actions for its improvement.

Research to develop and disseminate principles, standards and processes to improve research quality and impact, also from an ethical point of view.

Strategic research areas

Chemistry, radiation, innovative technologies and telemedicine

Research for protection and improvement of health through the analysis and reduction of chemical and radiation risks, for development and use of scientifically validated technologies and innovative therapies based on biomaterials, nanotechnologies and substances of natural origin.

Use of multidimensional evaluation tools of Health Technology Assessment (HTA) for the generation of scientific evidence through innovative methodologies and approaches (such as Big Data, digital technologies, "omics" sciences).

Studies for: development of methods for the characterization of chemical substances and medical devices; protection from ionizing and non-ionizing radiation and the optimization of the medical uses of radiation.

Strategic research areas

Studies for: clinical validation and multidimensional impact assessment to support the governance of health systems and care services with digital technologies.

Research on: the use of Big Data and Artificial Intelligence in diagnostic methodology; the development of bioinformatics, biostatistics and physico-computational tools; the advancement of methodologies, procedures and technological development of the large scientific instrumentation to support research and Quality Assurance.

Creation of thematic laboratories for Medical Devices, for research purposes and to support surveillance.

Adequate use of technologies to support frailty and disability.

Core facilities

Cutting-edge technologies for scientific research, control and surveillance activities and up-to-date technology platforms

Second generation sequencing

to analyse nucleic acids of organisms from viruses and bacteria to mammals and humans.
Its use is in increasing demand for the surveillance of infectious diseases and for a large number of researches ranging from parasites to humans.

Cytometry and cell separation

to analyse the cells and separate them on the basis of the antigens expressed and their structural characteristics.
Mass cytometry uses mass spectrometry to analyse dozens of different proteins on each individual cell.
Researchers also use these tools for innovative applications, such as the search for microorganisms, pathogenic and non-pathogenic, and the study of antibiotic resistance.

Magnetic resonance

to analyse the metabolites of cells and tissues and to produce sophisticated images that allow to study the temporal evolution of tumours in small experimental animals and the brain correlates of behaviour and response to drugs.

Core facilities

Microscopy
(confocal, correlative, super-resolution, time-lapse, scanning and transmission electron microscopy)
to perform sophisticated morphological analyses at the service of advanced research in all areas of biomedicine.

Mass spectrometry
for protein analysis that allows to identify and characterize in depth the proteins, their modifications and their interactions, with speed and efficiency unknown to traditional biochemistry. Reverse Phase Protein Arrays can simultaneously study hundreds of proteins and their modifications on as many different samples.

Electronic paramagnetic resonance spectroscopy
for the study of free radicals and antioxidants, as well as biological macromolecules, the effects of ionizing radiation, and food.

Cell factory • FaBioCell
for the production, with very rigorous techniques, of cells for human therapy used in the clinical trial of innovative immunological therapies.

Scientific computing
for bioinformatics and biostatistics support, with software and hardware resources necessary for sophisticated analyses of large amounts of biological data.

International networks

The ISS participates in international networks to promote cooperation on a **pan-European scale** and to offer a stimulating and innovative environment to the scientific communities.

The ISS represents Italy within the ERIC
(European Research Infrastructure Consortium)

in **3** European research infrastructures:

Facilitating European Clinical Research

ECRIN
EUROPEAN CLINICAL RESEARCH INFRASTRUCTURE NETWORK

European Advanced Translational Research Infrastructure

eatris
European infrastructure for translational medicine

Biobanking and BioMolecular resources Research Infrastructure

BBMRI-ERIC®

The ISS is partner of:

elixir
high-intensity data analysis in the field of life science

food quality and safety research to promote metrology for food and nutrition

METRO FOOD
INFRASTRUCTURE FOR PROMOTING METROLOGY IN FOOD AND NUTRITION

Networks for COVID-19

COVID-19 Data Portal

The ISS contributes to **Italian COVID-19 Data Portal** to bring together relevant datasets for sharing and analysis to accelerate coronavirus research. It enables researchers to upload, access and analyse COVID-19 related data and specialist datasets as part of the wider European COVID-19 Data Platform.

The ISS has set up **IRIDA-ARIES** a collaborative bioinformatics platform for the collection, analysis and sharing of genomic data of pathogenic microorganisms for the purpose of surveillance of infectious diseases, **including COVID-19**.

It hosts the **I-Co-Gen** (Italian-COVID-19-Genomic) genomic analysis platform, available to accredited laboratories, for the collection, analysis and sharing of data genomic characterization of **SARS-CoV-2 isolates**, to support the genomic surveillance of viral variants circulating at regional and national level. It is linked with the GISAID international genomics sharing platform, to provide fast and open access to epidemic and pandemic virus data.

ISS structures

Departments

- Cardiovascular, endocrine-metabolic and ageing-associated diseases
- Environment and health
- Food safety, nutrition and veterinary public health
- Infectious diseases
- Neurosciences
- Oncology and molecular medicine

National centres

- Addiction and doping
- Animal research and welfare
- Chemicals, cosmetics and consumer protection
- Clinical excellence, healthcare quality and safety
- Control and assessment of medicines
- Disease prevention and health promotion
- Drug research and evaluation
- Global health
- Health technology assessment
- HIV/AIDS research
- Innovative technologies in public health
- Radiation protection and computational physics
- Rare diseases
- Telemedicine and new healthcare technologies
- Blood
- Transplants

Reference centres

- Behavioural sciences and mental health
- Gender medicine

Technical-Scientific Services

- Biological service
- Core facilities
- Grant office and technology transfer
- Research coordination and support
- Statistics
- Notified Body

Offices of the President

- President's secretariat
- Scientific secretariat
- Scientific communication unit
- Knowledge unit (Documentation, Library)
- Training office
- External relations office and centre for international affairs
- Press office
- Bioethics unit

Information & contact

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